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Turbine Shaft to Pinion Gear Coupling

For Warranty Policy & Model Eligibility, Please visit us at www.hyetechllc.com

Subject: Removal, cleaning, inspection, rework, repair, and installation procedures for 6870832HT – Turbine Shaft to Pinion Gear Coupling.

Compliance: Any time the turbine assembly is removed.

Notes: Refer to OEM's published data for installation, engine operation and disassembly.

Technical aspects are FAA approved

Standard shop practices may be substituted for materials and procedures referenced herein provided they have been demonstrated as effective and safe for use with these parts or their OEM and other FAA approved equivalents.

1.1 REMOVAL

1.2 Remove Turbine Module and the turbine-to-compressor coupling in accordance with manufacturer's instructions.

1.3 Remove turbine to compressor coupling and turbine shaft to pinion gear coupling. Discard two piston rings.

2.1 CLEANING

2.2 Clean in alkaline liquid bath or soft grit blast. Protect part as required.

2.2.1 Soak the part of 30 – 60 minutes in an alkaline bath at approximately 200°F. The bath shall contain 20 ounces alkaline rust remover (MIL-D-26549 or equivalent) per gallon of water. Rinse in a high pressure water spray followed by an overflowing dip rinse in 170°F (approx) water.

2.2.2 Soft Grit Blast: This is a process of impinging a stream of soft abrasive grain (MIL-G-5634, Type 3 or equiv.) under 60 psi air pressure against the surface to be cleaned. The soft grit is fed by gravity to an air nozzle from an overhead hopper. Parts are subjected to this process for a period of time sufficient to produce the desire surface finish.

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3.1 INSPECTION

3.2 Inspect and repair or replace the gear coupling per Table 1:

Table 1

Condition	Service Limit	Repair Limit	Corrective Action
Crack indications at radii root corners of spline teeth. (Visual and MPI)	Cracks not permitted. Nonmetallic inclusions where no progression is evident are acceptable.	Not repairable.	Install new or serviceable Coupling if spline wear Service Limit is exceeded.
Spline Tooth Wear	Use 23060760 NO-GO gauge to measure wear. Max .001 inch wear normal to spline tooth profile. Optional: Measure over two .060 pins. Minimum 1.2747 measured in two places. **NOTE:** Pins must be short enough so as to fit into worn areas of the spline.	No Repair	Install new or serviceable Coupling if spline wear Service Limit is exceeded.
Spline Tooth Damage (any metal displacement such as chips, gouges, grooves, nicks, spalling, etc.) (Visual and MPI)	Spline tooth damage is not acceptable.	Not repairable	Install new or serviceable Coupling if spline wear Service Limit is exceeded.
Rough or Sharp Edges	Rough or sharp edges are not acceptable. No imperfections are acceptable after blending.	After blending, spline tooth wear service limits are met.	Blend using crocus cloth or Arkansas stone. Install new or serviceable coupling if Service Limit is exceeded.

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Condition	Service Limit	Repair Limit	Corrective Action
Localized Galling of splines (Visual)	Galling is not acceptable.	Maximum depth: 0.005 inch Any length.	Remove buildup or rough/sharp edges by stoning splines with an Arkansas stone (FED-SS-S-736, Type 1). Replace part if gall depth exceed serviceable limit.

NOTES:

- MPI technique as follows: A) Circular between heads & B) Longitudinal in a coil in accordance with the latest revision to ASTM E1444.

- Check backlash with splines mated and in normal operating axial position. Parts acceptable following backlash inspection shall be kept together as a matched set. The circumference backlash shall not exceed 0.006 in. (0.15 mm) max or be less than 0.002 in. (0.05 mm) min when measured at three circumferential positions equally spaced.

- Use a sharp pointed scribe. 0.020 in. radius, to detect a wear step. If a wear step can be felt with the scribe, it is larger than 0.001 in.

4.1 INSTALLATION

4.2 Assemble turbine in accordance with the manufacturer's instructions. When joining the turbine assembly to the gearbox, apply a thin coat of engine oil, MIL-L-23699, to the splines of turbine to compressor coupling. Insert the coupling through the gearbox to engage the splines of spur adapter gear shaft. Lubricate, MIL-L-23699, and install two piston seals on the turbine to pinion gear coupling. Apply engine oil, MIL-L-23699, to the splines of the coupling and insert the coupling in the power turbine rotor.